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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,101	04/14/2004	Keiichi Nito	09792909-5896	6149

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EXAMINER	
CHOI, WILLIAM C	

ART UNIT	PAPER NUMBER
2873	

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/824,101	NITO ET AL.	
	Examiner	Art Unit	
	William C. Choi	2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *20,23,24,28-31,49,52-60,87,90,91,95-98,125 and 128-136* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *49,52-60,125 and 128-136* is/are allowed.

6)☒ Claim(s) *20,23,31,87,90 and 98* is/are rejected.

7)☒ Claim(s) *24,28-30,91 and 95-97* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/711,651.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 20, 23, 31, 87, 90 and 98 are rejected under 35 U.S.C. 102(e) as being anticipated by Hatano (U.S. 6,549,185 B1).

In regard to claims 20 and 87, Hatano discloses a light modulation apparatus comprising: a liquid crystal device (column 5, lines 48-59, Figure 1); and a pulse control unit for changing the transmittance of light made incident on said liquid crystal device from a current transmittance into a target transmittance by sequentially applying at least two distinct drive pulses to said liquid crystal device (column 6, line 63 – column 7, line 27, Figure 3(A, B), "130 V, V_2"); wherein said at least two drive pulses include a first drive pulse having a first pulse height and a first pulse width (Figure 3(A), "130 V") and a second drive pulse having a second pulse height and a second pulse width (Figure 3(A), "V_2"); and wherein the first pulse height is greater than the second pulse height (Figure 3(A), "130 V, V_2").

Regarding claims 23 and 90, Hatano discloses wherein said apparatus further comprises a drive circuit unit, wherein the pulses are generated in synchronization with

a clock generated by said drive circuit unit (column 8, line 66 – column 9, line 13, Figure 8, "B', 63").

Regarding claims 31 and 98, the drive electrode of said liquid crystal device of Hatano would inherently be formed at least over the entire region of an effective light transmission portion, this being reasonably assumed from Hatano disclosing wherein said drive electrodes (i.e. ITO) are arranged on the inner sides of the glass plates enclosing said device and wherein said electrodes serve as the conductive interface for both sides of the liquid crystal (column 5, lines 50-52, Figure 1, "2").

Allowable Subject Matter

Claims 49, 52-60, 125, 128-136 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach a combination of all the claimed features as presented in claims 49, 52-60: an image pickup apparatus comprising a light modulation apparatus including a liquid crystal device and a pulse control unit as claimed, specifically wherein said control unit sequentially applies at least two distinct drive pulses wherein said first pulse height or width is greater than that of the second pulse and wherein said light modulation apparatus is disposed in an optical path of an optical system of said image pickup apparatus.

The prior art fails to teach a combination of all the claimed features as presented in claims 125 and 128-136: a method of driving an image pickup apparatus in which a liquid crystal device of a light modulation apparatus is disposed in, comprising changing the transmittance of incident light on said liquid crystal device by sequentially applying

at least two distinct drive pulses to said device as claimed, specifically wherein said first pulse height or width is greater than that of the second pulse and wherein said light modulation apparatus is disposed in an optical path of an optical system of said image pickup apparatus.

Claims 24, 28-30, 91 and 95-97 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art fails to teach a combination of all the claimed features as presented in claims 24 and 91: a light modulation apparatus and method of driving thereof, comprising a liquid crystal device and a pulse control unit as claimed, specifically wherein luminance information of the light emerged from said liquid crystal device is fed back to said control unit and the drive pulses are generated in synchronization with said clock.

The prior art fails to teach a combination of all the claimed features as presented in claims 28 and 95: a light modulation apparatus and method of driving thereof, comprising a liquid crystal device and a pulse control unit as claimed, specifically further comprising a polarizing plate disposed in an optical path of light made incident on said liquid crystal device.

The prior art fails to teach a combination of all the claimed features as presented in claims 29, 30, 96 and 97: a light modulation apparatus and method of driving thereof, comprising a liquid crystal device and a pulse control unit as claimed, specifically further comprising a polarizing plate that is movable into and out of an optical path of light made incident on said liquid crystal device.

Response to Arguments

Applicant's arguments with respect to claims 20, 23, 31, 87, 90 and 98 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Akamine (JP 05122614 A) is being cited herein to show an image pickup device comprising some of the structural limitations of that of the claimed invention, but does not specifically disclose the at least 2 distinct drive pulses as claimed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Choi whose telephone number is (571) 272-2324. The examiner can normally be reached on Monday-Friday from about 9:00 am to 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps can be reached on (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

W.C.

William Choi
Patent Examiner
Art Unit 2873
August 9, 2005

Georgia Epps
Supervisory Patent Examiner
Technology Center 2800